Docket No.: 61683-00003USPT
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
George Nelson Bennett

Application No.: 10/699512 Confirmation No.:

Filed: October 31, 2003 Art Unit: N/A

For: RECOMBINATION ASSEMBLY OF LARGE DNA FRAGMENTS Examiner: Not Yet Assigned

INFORMATION DISCLOSURE STATEMENT (IDS)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed before the mailing date of a first Office Action on the merits as far as is known to the undersigned (37 CFR 1.97(b)(3)).

A copy of each reference on PTO/SB/08 is attached.

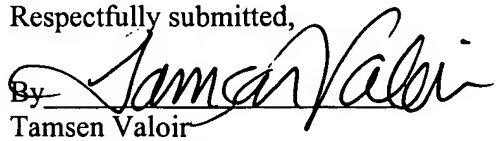
In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Information Disclosure statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

Enclosed is a check for $180.00 for the requisite fee for submission of an Information Disclosure Statement. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 10-0447, under Order No. 61683-00003USPT. A duplicate copy of this paper is enclosed.

Dated: February 26, 2004

Respectfully submitted,

By 

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Use in lieu of PTO/SB/17 (08-03)
(Form updated to reflect FY 2004 fees effective 10/1/03)

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003, Patent fees are subject to annual revision.

[X] Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 180.00

Complete if Known	
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Art Unit	N/A
Attorney Docket No.	61683-00003USPT

METHOD OF PAYMENT *(check all that apply)*

[ ] Check [ ] Credit Card [ ] Money Order [ ] Other [ ] None

[ ] Deposit Account:

Deposit Account Number: 10-0447

Deposit Account Name: Jenkens & Gilchrist, a Professional Corporation

The Director is authorized to: *(check all that apply)*

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[ ] Charge any additional fee(s) during the pendency of this application

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below		Fee Paid
Total Claims	8	-20** =		x		=	0.00
Independent Claims	2	-3** =		x		=	0.00
Multiple Dependent						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

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FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge – late filing fee or oath	
1052	50	2052	25	Surcharge – late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	180.00
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other fee (specify)					

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 180.00

SUBMITTED BY

(Complete *(if applicable)*)

Name (Print/Type)	Tamsen Valoir	Registration No. (Attorney/Agent)	41,417	Telephone	(713) 951-3381
Signature				Date	February 26, 2004

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Dated: February 26, 2004 Signature: Susan B. Jensen (Susan B. Jensen)

Application No. (if known): 10/699512 Attorney Docket No.: 61683-00003USPT

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IDS (Citation) by Applicant SB/08
Information Disclosure Statement
Fee Transmittal
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49 references
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 3

Complete If Known	
Application Number	10/699512
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First Named Inventor	George Nelson Bennett
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	61683-00003USPT

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	CA	Martinez-Morales, F., et al., Chromosomal integration of heterologous DNA in Escherichia coli with precise removal of markers and replicons used during construction. J Bacteriol, 1999. 181(22): p. 7143-8.	
	CB	Koob, M.D., et al., Minimizing the genome of Escherichia coli. Motivation and strategy. Ann N Y Acad Sci, 1994. 745: p. 1-3.	
	CC	Peredelchuk, M.Y. and G.N. Bennett, A method for construction of E. coli strains with multiple DNA insertions in the chromosome. Gene, 1997. 187(2): p. 231-8.	
	CD	Lorbach, E., et al., Site-specific recombination in human cells catalyzed by phage lambda integrase mutants. J Mol Biol, 2000. 296(5): p. 1175-81.	
	CE	Cherepanov, P.P. and W. Wackernagel, Gene disruption in Escherichia coli: TcR and KmR cassettes with the option of Flp-catalyzed excision of the antibiotic-resistance determinant.Gene, 1995. 158(1): p. 9-14.	
	CF	Chiang, S.L. and J.J. Mekalanos, Construction of a Vibrio cholerae vaccine candidate using transposon delivery and FLP recombinase-mediated excision. Infect Immun, 2000. 68(11): p. 6391-7.	
	CG	Tsuda, M., Use of a transposon-encoded site-specific resolution system for construction of large and defined deletion mutations in bacterial chromosome. Gene, 1998. 207(1): p. 33-41.	
	CH	Dale, E.C. and D.W. Ow, Gene transfer with subsequent removal of the selection gene from the host genome. Proc Natl Acad Sci U S A, 1991. 88(23): p. 10558-62.	
	CI	Delneri, D., et al., Exploring redundancy in the yeast genome: an improved strategy for use of the cre-loxP system. Gene, 2000. 252(1-2): p. 127-35.	
	CJ	Palmeros, B., et al., A family of removable cassettes designed to obtain antibiotic- resistance-free genomic modifications of Escherichia coli and other bacteria. Gene, 2000. 247(1-2): p. 255-64.	
	CK	Mao, X., Y. Fujiwara, and S.H. Orkin, Improved reporter strain for monitoring Cre recombinase-mediated DNA excisions in mice. Proc Natl Acad Sci U S A, 1999. 96(9): p. 5037 42.	
	CL	Caparon, M.G. and J.R. Scott, Excision and insertion of the conjugative transposon Tn916	

Examiner Signature		Date Considered	

PTO/SB/08a/b (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
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Sheet 2 of 3

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Filing Date	October 31, 2003
First Named Inventor	George Nelson Bennett
Art Unit	N/A
Examiner Name	Not Yet Assigned
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		involves a novel recombination mechanism. Cell, 1989. 59(6): p. 1027-34.	
	CM	Storrs, M.J., et al., Conjugative transposition of Tn916 requires the excisive and integrative activities of the transposon-encoded integrase. J Bacteriol, 1991. 173(14): p. 4347-52.	
	CN	Manganelli, R., S. Ricci, and G. Pozzi, Conjugative transposon Tn916: evidence for excision with formation of 5'-protruding termini. J Bacteriol, 1996. 178(19): p. 5813-6.	
	CO	Rudy, C., et al., Excision of a conjugative transposon in vitro by the Int and Xis proteins of Tn916. Nucleic Acids Res, 1997. 25(20): p. 4061-6.	
	CP	Connolly, K.M., M. Iwahara, and R.T. Clubb, Xis protein binding to the left arm stimulates excision of conjugative transposon Tn916. J Bacteriol, 2002. 184(8): p. 2088-99.	
	CQ	Platt, R., et al., Genetic system for reversible integration of DNA constructs and lacZ gene fusions into the Escherichia coli chromosome. Plasmid, 2000. 43(1): p. 12-23.	
	CR	Kim, S.Y., et al., Modification of bacterial artificial chromosome clones using Cre recombinase: introduction of selectable markers for expression in eukaryotic cells. Genome Res, 1998. 8(4): p. 404-12.	
	CS	Golic, M.M., et al., FLP-mediated DNA mobilization to specific target sites in Drosophila chromosomes. Nucleic Acids Res, 1997. 25(18): p. 3665-71.	
	CT	Christ, N., T. Corona, and P. Droge, Site-specific recombination in eukaryotic cells mediated by mutant lambda integrases: implications for synaptic complex formation and the reactivity of episomal DNA segments. J Mol Biol, 2002. 319(2): p. 305-14.	
	CU	Call, L.M., et al., A cre-lox recombination system for the targeted integration of circular yeast artificial chromosomes into embryonic stem cells. Hum Mol Genet, 2000. 9(12): p. 1745-51.	
	CV	Feng, Y.Q., et al., Site-specific chromosomal integration in mammalian cells: highly efficient CRE recombinase-mediated cassette exchange. J Mol Biol, 1999. 292(4): p. 779-85.	
	CW	Thyagarajan, B., et al., Mammalian genomes contain active recombinase recognition sites. Gene, 2000. 244(1-2): p. 47-54.	
	CX	Diaz, V., et al., The prokaryotic beta-recombinase catalyzes site-specific recombination in mammalian cells. J Biol Chem, 1999. 274(10): p. 6634-40.	
	CY	Olivares, E.C., R.P. Hollis, and M.P. Calos, Phage R4 integrase mediates site-specific integration in human cells. Gene, 2001. 278(1-2): p. 167-76.	
	CZ	Moskowitz, I.P., K.A. Heichman, and R.C. Johnson, Alignment of recombination sites in Hin-mediated site-specific DNA recombination. Genes Dev, 1991. 5(9): p. 1635-45.	
	CA1	Haykinson, M.J., et al., The Hin dimer interface is critical for Fis-mediated activation of the catalytic steps of site-specific DNA inversion. Curr Biol, 1996. 6(2): p. 163-77.	
	CB1	Merickel, S.K., M.J. Haykinson, and R.C. Johnson, Communication between Hin recombinase and Fis regulatory subunits during coordinate activation of Hin-catalyzed site-specific DNA inversion. Genes Dev, 1998. 12(17): p. 2803-16.	
	CC1	Stark, W.M., M.R. Boocock, and D.J. Sherratt, Site-specific recombination by Tn3 resolvase. Trends Genet, 1989. 5(9): p. 304-9.	
	CD1	Arnold, P.H., et al., Mutants of Tn3 resolvase which do not require accessory binding sites for recombination activity. Embo J, 1999. 18(5): p. 1407-14.	
	CE1	Canosa, I., et al., Site-specific recombination by the beta protein from the streptococcal plasmid pSM19035: minimal recombination sequences and crossing over site. Nucleic Acids Res, 1996. 24(14): p. 2712-7.	
	CF1	Canosa, I., et al., beta Recombinase catalyzes inversion and resolution between two inversely oriented six sites on a supercoiled DNA substrate and only inversion on relaxed or linear substrates. J Biol Chem, 1998. 273(22): p. 13886-91.	
	CG1	Muyrers, J.P., et al., Point mutation of bacterial artificial chromosomes by ET recombination. EMBO Rep, 2000. 1(3): p. 239-43.	
	CH1	Muyrers, J.P., et al., Rapid modification of bacterial artificial chromosomes by ET-recombination. Nucleic Acids Res, 1999. 27(6): p. 1555-7.	
	CI1	Yoon, Y.G., J.H. Cho, and S.C. Kim, Cre/loxP-mediated excision and amplification of large	

Examiner Signature		Date Considered	

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Approved for use through 07/31/2006. OMB 0651-0031
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		segments of the Escherichia coli genome. Genet Anal, 1998. 14(3): p. 89-95.	
	CJ1	Cheng, T.H., et al., Controlling gene expression in yeast by inducible site-specific recombination. Nucleic Acids Res, 2000. 28(24): p. E108.	
	CK1	Choi, S., et al., A new approach for the identification and cloning of genes: the pBACwich system using Cre/lox site-specific recombination. Nucleic Acids Res, 2000. 28(7): p. E19.	
	CL1	Sclimenti, C.R., B. Thyagarajan, and M.P. Calos, Directed evolution of a recombinase for improved genomic integration at a native human sequence. Nucleic Acids Res, 2001. 29(24): p. 5044-51.	
	CM1	Johnson, R.C., Bacterial Site-Specific DNA Inversion Systems, in Mobile DNA II, N.L. Craig, Craigie, R., Gellert, M., Lambowitz. A. M., Editor. 2002, ASM Press: Washington, D.C. p. 230-271.	
	CN1	Grindley, N.D.F., The Movement of Tn3-Like Elements: Transposition and Cointegrate Resolution, in Mobile DNA II, N.L. Craig, Craigie, R., Gellert, M., Lambowitz. A. M., Editor. 2002. p 272-302.	
	CO1	Posfai, G., et al., In vivo excision and amplification of large segments of the Escherichia coli genome. Nucleic Acids Res, 1994. 22(12): p. 2392-8.	
	CP1	Buchholz, F., P.O. Angrand, and A.F. Stewart, Improved properties ofFLP recombinase evolved by cycling mutagenesis. Nat Biotechnol, 1998. 16(7): p. 657-62.	
	CQ1	Scott, J.R., et al., Conjugative transposition of Tn916: preferred targets and evidence for conjugative transfer of a single strand and for a double-stranded circular intermediate. Mol Microbiol, 1994. 11(6): p. 1099-108.	
	CR1	Poyart-Salmeron, C., et al., The integration-excision system of the conjugative transposon Tn 1545 is structurally and functionally related to those of lambdoid phages. Mol Microbiol, 1990. 4(9): p. 1513-21.	
	CS1	Trieu-Cuot, P., et al., Sequence requirements for target activity in site-specific recombination mediated by the Int protein of transposon Tn 1545. Mol Microbiol, 1993. 8(1): p. 179-85.	
	CT1	Sauer, B. and N. Henderson, Targeted insertion of exogenous DNA into the eukaryotic genome by the Cre recombinase. New Biol, 1990. 2(5): p. 441-9.	
	CU1	Johnson, R.C., Mechanism of site-specific DNA inversion in bacteria. Curr Opin Genet Dev, 1991. 1(3): p. 404-11.	
	CV1	Rojo, F. and J.C. Alonso, The beta recombinase of plasmid pSM19035 binds to two adjacent sites, making different contacts at each of them. Nucleic Acids Res, 1995. 23(16): p. 3181-8.	
	CW1	Huang, L.C., E.A. Wood, and M.M. Cox, A bacterial model system for chromosomal targeting. Nucleic Acids Res, 1991. 19(3): p. 443-8.	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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